Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matters of	)	
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	
E911 Requirements for IP-Enabled Service Providers	)	WC Docket No. 05-196
	)	

FIRST REPORT AND ORDER AND NOTICE OF PROPOSED RULEMAKING

Adopted: May 19, 2005 **Released: June 3, 2005**

Comment Date: [45 days after publication in the Federal Register]
Reply Comment Date: [75 days after publication in the Federal Register]

By the Commission: Chairman Martin, and Commissioners Abernathy, Copps and Adelstein issuing separate statements.

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I. INTRODUCTION

1. In this Order, we adopt rules requiring providers of interconnected voice over Internet Protocol (VoIP) service to supply enhanced 911 (E911) capabilities to their customers.[1] Interconnected VoIP providers may satisfy this requirement by interconnecting indirectly through a third party such as a competitive LEC, interconnecting directly with the Wireline E911 Network, or through any other solution that allows a provider to offer E911 service. The characteristics of interconnected VoIP services have posed challenges for 911/E911 and threaten to compromise public safety.[2] Thus, we require providers of interconnected VoIP service to provide E911 services to all of their customers as a standard feature of the service, rather than as an optional enhancement. We further require them to provide E911 from wherever the customer is using the service, whether at home or away from home.

2. We adopt an immediate E911 requirement that applies to all interconnected VoIP services. In some cases, this requirement relies on the customer to self-report his or her location. We intend in a future order to adopt an advanced E911 solution for interconnected VoIP that must include a method for determining a user's location without assistance from the user as well as firm implementation deadlines for that solution. To this end, we seek comment in the Notice of Proposed Rulemaking (*NPRM*) on possible additional solutions including technical options and possible timelines for implementation.

3. In many ways, our action today is a necessary and logical follow-up to the *Vonage Order* issued late last year.[3] In that order, the Commission determined that Vonage's DigitalVoice service – an interconnected VoIP service – cannot be separated into interstate and intrastate communications and that this Commission has the responsibility and obligation to decide whether certain regulations apply to

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[1] The term "interconnected" refers to the ability of the user generally to receive calls from and terminate calls to the public switched telephone network (PSTN), including commercial mobile radio service (CMRS) networks. *See infra* Part III.A.

[2] In this Order, we act on the E911 issues before the other issues pending in the *IP-Enabled Services* proceeding because of the urgent need to address public safety issues related to interconnected VoIP. For example, we are aware of a recent incident in Texas in which it was reported that a 911 call was not completed when an interconnected VoIP user dialed 911 to seek emergency assistance during a home invasion burglary. *See, e.g.*, Attorney General of Texas, *Texas Attorney General Abbott Takes Legal Action to Protect Internet Phone Customers*, News Release (Mar. 22, 2005) <http://www.oag.state.tx.us/oagnews/release.php?id=850&PHPSESSID=251eucgngcvrihiolvs370jo3>; Paul Davidson, *Net-based 911 Fight Puts Lives on Line: Regulatory Issues Among Obstacles*, USA Today (Mar. 1, 2005). In another incident, it was reported that a Connecticut woman was not able to reach an emergency dispatcher by dialing 911 using her interconnected VoIP service when her infant son needed emergency medical attention. *See* Connecticut Attorney General, *Attorney General, DCP Sue Broadband Phone Company for Misrepresenting Its 9-1-1 Emergency Capabilities*, Press Release (May 3, 2005) <http://www.cslib.org/attygenl/mainlinks/tabindex4.htm>; Marian Gail Brown, *Dialing Up Panic with 911*, Connecticut Post (May 2, 2005); *see also* Alicia A. Caldwell, *Pair Crusades for Better Access to 911 from High-Tech Phones*, Orlando Sentinel (May 7, 2005) (describing an incident in which a Florida mother reportedly was not able to reach an emergency dispatcher by dialing 911 using her interconnected VoIP service to get emergency medical assistance for her infant daughter); NASUCA Comments at 49-50.

[3] *See Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, WC Docket No. 03-211, Memorandum Opinion and Order, 19 FCC Rcd 22404, 22405, para. 2 (2004) (*Vonage Order*), *appeal pending, National Ass'n of State Util. Consumer Advocates v. FCC*, No. 05-71238 (9th Cir. filed Feb. 22, 2005); *id.* at 22432, para. 44 ("[W]e intend to address the 911 issue as soon as possible, perhaps even separately.").

DigitalVoice and other IP-enabled services having similar capabilities.[4] The *Vonage Order* also made clear that questions regarding what regulatory obligations apply to providers of such services would be addressed in the pending *IP-Enabled Services* proceeding.[5] Today, in accord with that statement, we take critical steps to advance the goal of public safety by imposing E911 obligations on certain VoIP providers, steps we believe will have support in the public safety community and the industry.[6]

4. The IP-enabled services marketplace is the latest new frontier of our nation's communications landscape. As such, new entrants and existing stakeholders are rushing to bring IP-enabled facilities and services to this market, relying on new technologies to provide a quickly evolving list of service features and functionalities. Although the Commission is committed to allowing these services to evolve without undue regulation in accord with our nation's policies for Internet services, we are, at the same time, aware of our obligation to promote "safety of life and property"[7] and to "encourage and facilitate the prompt deployment throughout the United States of a seamless, ubiquitous, and reliable end-to-end infrastructure"[8] for public safety. Congress has also established 911 as the national emergency number to enable all citizens to reach emergency services directly and efficiently, irrespective of whether a citizen uses wireline or wireless technology when calling for help by dialing 911.[9] As the Commission previously has stated,[10] and as commenters generally recognize, 911 service is critical to our nation's

[4] *See Vonage Order*, 19 FCC Rcd at 22405, 22424, paras. 1, 32.

[5] On March 10, 2004, the Commission released a Notice of Proposed Rulemaking to examine issues relating to services and applications making use of Internet Protocol (IP), including but not limited to VoIP services (collectively, "IP-enabled services"). *See IP-Enabled Services*, WC Docket No. 04-36, Notice of Proposed Rulemaking, 19 FCC Rcd 4863, 4864, para. 1 n.1 (2004) (*Notice*) (defining the term "IP-enabled services"). Comments were filed by May 28, 2004 and reply comments were filed by July 14, 2004. *See Pleading Cycle Established for Comments in IP-Enabled Services Rulemaking Proceeding*, WC Docket No. 04-36, Public Notice, 19 FCC Rcd 5589 (2004); *Wireline Competition Bureau Extends Reply Comment Deadlines for IP-Enabled Services Rulemaking and SBC's "IP Platform Services" Forbearance Petition*, WC Docket Nos. 04-29, 04-36, Public Notice, 19 FCC Rcd 10474 (2004); *see also* Appendix A (List of Commenters). In the *Notice*, the Commission sought comment on, among other things, the potential applicability of "basic 911," "enhanced 911," and related critical infrastructure regulation to VoIP and other IP-enabled services. *See Notice*, 19 FCC Rcd at 4898-99, para. 53. The remaining issues raised in the *Notice* will be addressed in the pending *IP-Enabled Services* proceeding.

[6] *See, e.g.*, Vonage Comments at 37 ("Vonage understands that it is in the public interest to provide customers access to emergency services, and believes that the continued development of these services is an important national priority.").

[7] *See* 47 U.S.C. § 151.

[8] Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286, § 2(b) (1999) (911 Act).

[9] *See* 911 Act § 3 (codified at 47 U.S.C. § 251(e)).

[10] *See, e.g., Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, RM-8143, 11 FCC Rcd 18676, 18679, para. 5 (1996) (*E911 First Report and Order*) ("E911 saves lives and property by helping emergency services personnel do their jobs more quickly and efficiently."); *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, CC Docket No. 94-102, IB Docket No. 99-67, Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 25340, 25340, para. 1

ability to respond to a host of crises.[11] Efforts by federal, state, and local government, along with the significant efforts by wireline and wireless service providers, have resulted in the nearly ubiquitous deployment of this life-saving service.[12]

5. Our decisions in this Order simply extend our longstanding and continuing commitment to a nationwide communications system that promotes the safety and welfare of all Americans. We believe that it is critically important to impose E911 obligations on interconnected VoIP providers and to set firm but realistic target deadlines for implementation of those requirements. At the same time, however, we allow the providers flexibility to adopt a technological solution that works best for them. In this Order, we take the necessary steps to promote cooperative efforts by state and local governments, public safety answering point (PSAP) administrators, 911 systems service providers, and interconnected VoIP providers that will lead to improved emergency services. Accordingly, today we adopt a balanced approach that takes into consideration the expectations of consumers, the need to strengthen Americans' ability to access public safety in times of crisis, and the needs of entities offering these innovative services.

II. BACKGROUND

A. History of 911 Service

6. Since AT&T first made the digits "9-1-1" available nationally for wireline access to emergency services in 1965,[13] the American public increasingly has come to depend on 911 service; the National Emergency Number Association (NENA) estimates that as of February 2005, some form of 911 service was available to nearly 99 percent of the population in 96 percent of the counties in the United States,[14] and 200 million calls are made to 911 in the United States each year.[15] It should therefore come as no

(2003) (*E911 Scope Order*) ("As many citizens, elected representatives, and public safety personnel recognize, 911 service is critical to our Nation's ability to respond to a host of crises.").

[11] *See, e.g.*, AARP Comments at 2; APCO Comments at 4; Arizona Commission Comments at 13-14; Avaya Comments at 17; BRETSA Comments at 1; Cisco Comments at 11; CUB Comments at 28; FERUP Comments at 14; Missouri Commission Comments at 10; NASUCA Comments at 47; NENA Comments at 3; New Jersey Ratepayer Advocate Comments at 17; NCL Comments at 4; CWA Comments at 21; King County Comments at 6; Qwest Comments at 42; Texas Coalition of Cities Comments at 4; USTA Comments at 40; Utah Commission Comments at 7-8; Cingular Reply at 15; Florida Commission Reply at 22; IAC Reply at 7-8; NASUCA Reply at 43-44; NENA Reply at 2; New Jersey Ratepayer Advocate Reply at 12; NATOA *et al.* Reply at 14-15.

[12] *See E911 Scope Order*, 18 FCC Rcd at 25340, para. 1.

[13] *See Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, Notice of Proposed Rulemaking, 9 FCC Rcd 6170, 6172, para. 3 (1994) (*E911 NPRM*); *Implementation of the 911 Act; The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, WT Docket No. 01-110, CC Docket No. 92-105, Fourth Report and Order and Third Notice of Proposed Rulemaking, and Notice of Proposed Rulemaking, 15 FCC Rcd 17079, 17084, para. 9 (2000) (*N11 Codes Fourth Report and Order*) (citing *E911 First Report and Order*, 11 FCC Rcd at 18678, paras. 1-2).

[14] *See* National Emergency Number Association, *911 Fast Facts* (visited Apr. 25, 2005) <http://www.nena.org/911_facts/911fastfacts.htm> (NENA 911 Fast Facts).

[15] *See id.*

surprise that the American public has developed certain expectations with respect to the availability of 911 and E911 emergency services via certain classes of communications devices.[16]

7. The availability of this critical service is due largely to the efforts of state and local authorities and telecommunications carriers, who have used the 911 abbreviated dialing code to provide access to increasingly advanced and effective emergency service capabilities.[17] Indeed, absent appropriate action by, and funding for, states and localities, there can be no effective 911 service. Responsibility for establishing and designating PSAPs or appropriate default answering points, purchasing customer premises equipment (CPE), retaining and training PSAP personnel, purchasing 911 network services, and implementing a cost recovery mechanism to fund all of the foregoing, among other things, falls squarely on the shoulders of states and localities.

8. At the same time, however, new communications technologies have posed technical and operational challenges to the 911 system, necessitating the adoption of a uniform national approach to ensure that the quality and reliability of 911 service is not damaged by the introduction of such communications technologies. For example, following the introduction of CMRS in the United States, the Commission in 1996 established rules requiring CMRS carriers to implement basic 911 and E911 services.[18] Virtually all CMRS carriers and wireline local exchange carriers (LECs) now provide at least basic 911 service.[19]

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[16] *See generally* Dale N. Hatfield, *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services* <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513296239> (Hatfield Report). Indeed, one of the criteria the Commission identified in the *E911 Scope Order* as relevant to determining whether particular entities should be subject to some form of 911/E911 regulation was whether customers using the service or device have a reasonable expectation of access to 911 and E911 services. *See E911 Scope Order*, 18 FCC Rcd at 25347, paras. 18-19. Numerous commenters in this proceeding also noted the expectations that Americans have developed with respect to the availability of 911 service. *See, e.g.*, Alcatel Comments at 18-19; APCO Comments at 4, 7; Arizona Commission Comments at 13-14; CenturyTel Comments at 24; Cox Comments at 19; King County E911 Program Comments at 2; SBC Comments at 60; FCC Intergovernmental Advisory Committee Comments at 7; NENA Reply at 1. *But see* EFF Comments at 5 (questioning the Commission's ability to assess consumer expectations accurately and noting that consumer expectations change over time).

[17] *See N11 Codes Fourth Report and Order*, 15 FCC Rcd at 17084, para. 9 (citing *E911 First Report and Order*, 11 FCC Rcd 18676, paras. 1-2); *see also, e.g.*, Letter from Gino P. Menchini, Commissioner, New York City Department of Information Technology and Telecommunications, and Inspector Charles F. Dowd, Commanding Officer, Communications Division/NYC E-911, New York City Police Department, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 (filed Apr. 22, 2005) (New York City Apr. 22, 2005 *Ex Parte* Letter).

[18] The basic 911 rules require covered carriers to deliver all 911 calls to the appropriate PSAP or a designated answering point. *See* 47 C.F.R. §§ 20.18(b), 64.3001. Basic 911 requirements, however, do not address what information the PSAP should receive from that call; rather they are designed to ensure the appropriate delivery of 911 calls. *See Notice*, 19 FCC Rcd at 4898, para. 52; *E911 First Report and Order*, 11 FCC Rcd at 18679, 20862-69, paras. 4, 29-46. The Commission therefore adopted enhanced 911 rules requiring covered wireless carriers to be capable of delivering the calling party's call back number and the calling party's location information to requesting PSAPs. *See* 47 C.F.R. § 20.18; *E911 First Report and Order*, 11 FCC Rcd at 18689-722, paras. 54-91; *infra* note 41.

[19] *See* Federal Communications Commission, *Basic 911 Carrier Transition Reports* (last modified Nov. 24, 2004) <http://www.fcc.gov/911/basic/reports/>. Although there are no Commission requirements that wireline LECs provide E911 service, some states have laws imposing such requirements. *See, e.g.*, N.J. Stat. Ann. § 52:17C-4

9. Congress adopted the 911 Act to promote and enhance public safety through the use of wireless communications services.[20] More broadly, the 911 Act directed the Commission to designate 911 as the universal emergency assistance number for wireless and wireline calls,[21] which the Commission accomplished in August 1999.[22] The 911 Act further requires the Commission to "consult and cooperate with state and local officials" in its role of encouraging and supporting the deployment of "comprehensive end-to-end emergency communications infrastructure and programs."[23] The Commission continues to meet Congress' mandate,[24] and states and localities continue to make progress towards meeting Congress' goal.[25]

10. As the Commission has previously noted, the emergence of IP as a means of transmitting voice and data and providing other services via wireless, cable, and wireline infrastructure has significant implications for meeting the nation's critical infrastructure and 911 communications needs.[26] Intrado has estimated that while the number of residential 911 calls placed over VoIP services (VoIP 911 calls) will account for less than two percent of all residential 911 calls for the period 2004-2006, the number of residential VoIP 911 calls will rise from 370,000 in 2004 to 3.5 million in 2006.[27] This nearly tenfold increase in expected VoIP 911 calls dictates swift action on our part. Through this Order, we fulfill our role to ensure that the increasingly widespread deployment of a new communications technology does not damage the ability of states and localities to provide reliable and high-quality 911 service to all citizens.

B. 911 Technical and Operational Issues

11. 911 service features, and the ability of PSAPs to make use of them, vary from location to location and network to network. 911 service generally, however, falls into two categories – basic and enhanced.

(2005); Me. Rev. Stat. Ann. tit. 25, § 2933 (2005). Wireline LECs provide some level of enhanced 911 service (*i.e.*, at least a call back number) for callers located in 93% of counties with 911 coverage. *See* NENA 911 Fast Facts.

[20] *See* H.R. Rep. No. 106-25 at 1.

[21] *See* 911 Act § 3(a) (codified at 47 U.S.C. § 251(e)(3)).

[22] *See N11 Codes Fourth Report and Order*, 15 FCC Rcd at 17083-85, paras. 8-14.

[23] 911 Act § 3(b).

[24] *See, e.g., Implementation of the 911 Act; The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, CC Docket No. 92-105, WT Docket No. 00-110, Fifth Report and Order, First Report and Order and Memorandum Opinion and Order on Reconsideration, 16 FCC Rcd 22264 (2001) (*N11 Codes Fifth Report and Order*); Federal Communications Commission, *State 911 Deployment Plans* (last modified Nov. 24, 2004) <http://www.fcc.gov/911/stateplans/>; Federal Communications Commission, *Wireless E911 Coordination Initiative* (last modified Apr. 23, 2004) <http://wireless.fcc.gov/outreach/e911/>.

[25] *See, e.g.*, Federal Communications Commission, *Enhanced 911 Reports* (last modified Nov. 24, 2004) <http://www.fcc.gov/911/enhanced/reports/> (providing access to carrier generated reports regarding wireless E911 deployment).

[26] *See Notice*, 19 FCC Rcd at 4897-98, para. 51.

[27] *See* Intrado Inc., *VoIP 9-1-1 Frequently Asked Questions* (visited Apr. 20, 2005) <http://www.intrado.com/main/home/news/features/voipfaq.jsp>.

12. ***Basic 911.*** Basic 911 service is a forwarding arrangement in which calls dialed to 911 are transmitted from the service provider's switch to a single geographically appropriate PSAP or public safety agency, usually over dedicated emergency trunks.[28] Basic 911 networks are not capable of processing the caller's location, but simply forward all 911 calls to the appropriate PSAP or public safety agency.[29] Nor does basic 911 provide PSAP call takers with the caller's location information or, in some cases, a call back number.[30] Although some emergency systems provide only basic 911 service, most systems have implemented E911 service.[31]

13. ***E911.*** E911 systems route 911 calls through the use of a Selective Router to a geographically appropriate PSAP based on the caller's location.[32] E911 also provides the call taker with the caller's call back number, referred to as Automatic Numbering Information (ANI),[33] and, in many cases, location information – a capability referred to as Automatic Location Identification (ALI). Both wireline and wireless carriers provide E911 services in many localities.

14. ***Wireline E911.*** The core of the existing wireline E911 network is a dedicated, redundant, highly reliable wireline network (Wireline E911 Network), which is interconnected with but largely separate from the PSTN.[34] The Wireline E911 Network generally has been implemented, operated, and maintained by a subset of incumbent LECs, and generally is paid for by PSAPs through tariffs.[35]

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[28] *See E911 NPRM*, 9 FCC Rcd at 6171, para. 5.

[29] *See* Hatfield Report at 3. This limitation of basic 911 service can be problematic when a single end office serves a geographic area that encompasses multiple political jurisdictions; call takers not only must determine the caller's location but also determine which jurisdiction's first responders should be dispatched. *See id.* at 4-5.

[30] *See* Hatfield Report at 3-4.

[31] *See* NENA 911 Fast Facts.

[32] *See* Hatfield Report at 5. Thus, unlike normal phone calls, 911 calls are routed based on the calling number (which is linked to a particular geographic area and political jurisdiction), not the called number. *See id.*; *see also E911 First Report and Order*, 11 FCC Rcd at 18679, para. 5. The Selective Router is described in greater detail in para. 15 *infra*.

[33] The use of the term "ANI" is not intended as a reference to billing number presentation provided as part of Feature Group B or D local exchange services. Although the number presented to a PSAP on a wireline E911 call may be derived from Feature Group B or D services, the number presented to a PSAP on a wireless or VoIP call may be generated by several other means. Thus, the term ANI merely identifies a call back number associated with the caller. The term does not reflect a specific service or technology. *See* 47 C.F.R. § 20.3.

[34] *See* Hatfield Report at 5; Letter from Cindy Schonhaut, Director, Federal Regulatory Affairs, Level 3 Communications, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 2 (filed Apr. 7, 2005) (Level 3 Apr. 7, 2005 *Ex Parte* Letter). Our description of the Wireline E911 Network is intended to be illustrative, not definitive. As the Commission has noted previously, there are a variety of situations existing in the more than 6,000 PSAPs across the nation, including differences in state laws and regulations governing the provision of 911 services, the configuration of wireless systems, the technical sophistication of existing 911 network components, and existing agreements between carriers and PSAPs. *See, e.g.*, Letter from Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, to Marlys R. Davis, E911 Program Manager, Department of Information and Administrative Services, King County, Washington, CC Docket No. 94-102 at 3 (dated May 7, 2001) (*King County Letter*), *pet. recon. denied, Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Request of King County, Washington*, CC Docket No. 94-102, Order on Reconsideration, 17 FCC Rcd 14789, 14790, para. 3 (2002) (*King County Reconsideration Order*).

[35] Incumbent LECs own and operate most of the Selective Routers, ALI Databases, the trunks to carry 911 calls, and sometimes the CPE upon which a PSAP's 911 system is based. The service between the incumbent LEC and PSAP

Network implementations vary from carrier to carrier and jurisdiction to jurisdiction, but usually are based on a 25-year-old architecture and implemented with legacy components that place significant limitations on the functions that can be performed over the network.[36]

15. In a typical implementation, the Wireline E911 Network includes the Selective Router, which receives 911 calls from competitive and incumbent LEC central offices over dedicated trunks.[37] The Selective Router, after querying an incumbent LEC-maintained Selective Router Database (SRDB) to determine which PSAP serves the caller's geographic area, forwards the calls to the PSAP that has been designated to serve the caller's area, along with the caller's phone number (ANI). The PSAP then forwards the caller's ANI to an incumbent LEC maintained Automatic Location Information database (ALI Database),[38] which returns the caller's physical address (that has previously been verified by comparison to a separate database known as the Master Street Address Guide (MSAG)).[39] The Wireline E911 Network thus consists of: the Selective Router; the trunk line(s) between the Selective Router and the PSAP; the ALI Database; the SRDB; the trunk line(s) between the ALI database and the PSAP; and the MSAG.[40]

16. ***Wireless E911.*** Under the Commission's wireless E911 rules, wireless carriers are obligated to "provide the telephone number of the originator of a 911 call" (*i.e.*, ANI) and information regarding the caller's location (*i.e.*, ALI) to any PSAP, which has requested that such information be delivered with 911 calls.[41]

17. The mobile nature of wireless technology and service presents significant obstacles to making E911 effective – in particular the provision to PSAPs of accurate ALI.[42] Specifically, the mobility of wireless subscribers renders the use of permanent street addresses as a location indicator useless, and in

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is contractual in nature and paid for by the PSAP typically through a special tariff filed with the state public utility commission. *See, e.g., Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, 14 FCC Rcd 20850, 20886-87, paras. 92, 94 (1999) (*E911 Second Memorandum Opinion and Order*); *E911 First Report and Order*, 11 FCC Rcd at 18710, para. 66. States and localities have developed cost recovery mechanisms to fund PSAPs. *See infra* Part III.D.

[36] *See* Hatfield Report at 14.

[37] The Selective Router also is known as a E911 Control Office or E911 Tandem. *See id.* at 5. The presence of and functionality provided by the Selective Router is the key characteristic that distinguishes basic 911 from E911 service. *See id.*

[38] The SRDB and the ALI Database may be the same database.

[39] The ALI Database may also return additional information, such as the name of the individual who is billed for telephone service at that address.

[40] *See King County Letter* at 3-6; *King County Reconsideration Order*, 17 FCC Rcd at 14792-96, paras. 8-16; Hatfield Report at 3-5.

[41] The Commission's wireless E9 1 requirements are comprised of two phases. Pursuant to the Phase I rules, wireless carriers are required to p vide a call back number for the handset placing the 911 call and report the location of the cell site or base station that received the call. The Phase I rules required compliance by April 1, 1998, or within six months of a PSAP request, whichever is later. *See* 47 C.F.R. § 20.18(d). Under the Phase II rules, wireless carriers are required to provide more accurate 911 call location information. *See* 47 C.F.R. § 20.18(e). The degree of location accuracy required under the Phase II rules varies, depending on whether the carrier utilizes a network-based or handset-based solution. *See* 47 C.F.R. § 20.18(h).

[42] *See E911 First Report and Order*, 11 FCC Rcd at 18680, para. 7.

fact may require the provision of real-time location updates to the PSAP.[43] Wireless carriers therefore have developed various techniques to provision ANI and ALI to the PSAP that involve enhancements and/or "add-ons" to the existing Wireline E911 Network.[44] Many of these techniques involve the use of "pseudo-ANI" or "p-ANI": a "number, consisting of the same number of digits as ANI, that is not a North American Numbering Plan telephone directory number and may be used in place of ANI to convey special meaning" to the Selective Router, PSAP, and other elements of the 911 system.[45] For example, Selective Routers that have been programmed to handle p-ANI will be able to properly route 911 calls from any wireless subscriber to a geographically appropriate PSAP, even if the caller has a NPA-NXX number[46] not associated with his or her location.[47] PSAPs that are equipped to handle p-ANI can distinguish wireless from wireline calls, and can use the p-ANI to query the ALI Database for non-traditional location information.[48] Forms of p-ANI known as "Emergency Services Routing Key" (ESRK), "Emergency Services Query Key" (ESQK), and "Emergency Services Routing Digits" currently are used to cause the Wireline E911 Network to properly handle and process E911 calls placed by CMRS subscribers.[49]

18. Development and implementation of these enhancements required significant cooperative efforts from wireless and wireline providers, manufacturers, third-party providers, state and local governments, public safety authorities, and consumer interest groups.[50] The Commission ultimately held, however, that in the absence of an agreement to the contrary, the appropriate demarcation point for allocating responsibilities and costs between wireless carriers and PSAPs for such enhancements is the input to the Selective Router.[51] Thus, a wireless carrier is responsible for all hardware and software components and functionalities that precede the Selective Router, including the trunk from the carrier's Mobile Switching Center to the Selective Router, and the particular databases, interface devices, and trunks lines that may be needed to deliver E911 data to the PSAP.[52] The PSAP is responsible for any costs associated with the Selective Router itself, any required upgrades to the Selective Router, the ALI Database and any

[43] *See* Hatfield Report at 9.

[44] *See E911 Second Memorandum Opinion and Order*, 14 FCC Rcd at 20881-86, paras. 75-92. For a detailed description of the E911 implementations utilized by wireless carriers, *see* Hatfield Report at 9-11. *See also* NENA, NENA Generic E9-1-1 Requirements Technical Information Document, Issue 1 at 7 (July 23, 2004) <http://www.nena9-1-1.org/9-1-1TechStandards/TechInfoDocs/E9-1-1%20Requirements%2008-502u.pdf> (NENA TID).

[45] *See* 47 C.F.R. § 20.3. The special meaning assigned to the pseudo-ANI is determined by agreements, as necessary, between the system originating the call, intermediate systems handling and routing the call, and the destination system. *See id.*

[46] Telephone numbers consist of ten digits in the form NPA-NXX-XXXX. The first three digits, or the "NPA," refer to the area code. The second three digits, or the "NXX," refer to the central office code. *See* 47 C.F.R. §§ 52.7(a), (c).

[47] *See King County Reconsideration Order*, 17 FCC Rcd at 14792-93, para 8 n.17; Hatfield Report at 9-11; NENA TID at 4-5.

[48] *See King County Reconsideration Order*, 17 FCC Rcd at 14792-93, para 8 n.17; Hatfield Report at 9-11; NENA TID at 17-18, 19-20.

[49] *See generally* NENA TID.

[50] *See E911 Second Memorandum Opinion and Order*, 14 FCC Rcd at 20855, para. 10.

[51] *See King County Reconsideration Order*, 17 FCC Rcd at 14790-91, para 4.

[52] *See id.*

upgrades thereto, the SRDB and any upgrades thereto, the MSAG, the trunk from the Selective Router to the PSAP, and the PSAP CPE.[53]

C. The IP-Enabled Services Notice

19. In the *Notice*, we asked, among other things, about the potential applicability of "basic 911," "enhanced 911," and related critical infrastructure regulation to VoIP and other IP-enabled services.[54] Specifically, after noting that the Commission previously found in the *E911 Scope Order* that it has statutory authority under sections 1, 4(i), and 251(e)(3) of the Communications Act of 1934, as amended (Act),[55] to determine what entities should be subject to the Commission's 911 and E911 rules,[56] the Commission sought comment on whether it should exercise its regulatory authority in the context of IP-enabled services.[57] The Commission further sought comment on the appropriate criteria for determining whether and to what extent IP-enabled services should fall within the scope of its 911 and E911 regulatory framework,[58] and whether IP-enabled services are technically and operationally capable of meeting the Commission's basic and/or E911 rules or of providing analogous functionalities that would meet the intent of the 911 Act and the Commission's regulations.[59]

D. The Vonage Order

20. On November 12, 2004, the Commission released the *Vonage Order*, in which it preempted an order of the Minnesota Public Utilities Commission (Minnesota Commission) that applied Minnesota's traditional "telephone company" regulations to Vonage's DigitalVoice service.[60] Vonage's DigitalVoice

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[53] *See id.*

[54] *See Notice*, 19 FCC Rcd at 4898-99, para. 53.

[55] 47 U.S.C. §§ 151, 154(i), 251(e)(3).

[56] *See Notice*, 19 FCC Rcd at 4898-99, para. 53 n.160 (citing *E911 Scope Order*, 18 FCC Rcd at 25345-46, paras. 13-15).

[57] *See id.* at 4898-99, 4900-01, paras. 53, 55-56.

[58] *See id.* at 4900-01, paras. 55-56. The *Notice* sets forth four criteria the Commission previously has used to determine whether particular entities should, in the public interest, be subject to some form of 911/E911 regulation: (1) the entity offers real-time, two-way switched voice service, interconnected with the public switched network, either on a stand-alone basis or packaged with other telecommunications services; (2) customers using the service or device have a reasonable expectation of access to 911 and E911 services; (3) the service competes with traditional CMRS or wireline local exchange service; and (4) it is technically and operationally feasible for the service or device to support E911. *See id.* at 4900, para. 55. The Commission first relied on these criteria in the *E911 Scope Order*, where the Commission made clear that factors other than the four listed criteria could also inform the Commission's decision regarding what 911/E911 obligations should be imposed on a service provider. *See id.* (citing *E911 Scope Order*, 18 FCC Rcd at 25347, para. 19). In the *Notice*, the Commission sought comment on whether VoIP services, and other IP-enabled services, satisfy these four criteria. The Commission also sought comment on whether these four criteria provide the appropriate analytical framework for determining whether, and to what extent, IP-enabled services should fall within the scope of the Commission's 911/E911 regulatory framework, and whether modifications to these criteria, or other criteria, would better serve the public interest in light of the variety of IP-enabled services and their very different functionalities. *See id.*

[59] *See Notice*, 19 FCC Rcd at 4898-900, paras. 53-54.

[60] *See Vonage Order*, 19 FCC Rcd at 22411, para. 14. DigitalVoice is an IP-enabled service that provides real-time, multidirectional voice functionality to its end users over any broadband connection. *See id.* at 22407, para. 7.

service is a portable service that is available anywhere the Vonage customer is able to obtain a broadband connection.[61] Vonage does not supply that broadband connection.[62] Vonage's DigitalVoice service assigns its users North American Numbering Plan (NANP) numbers and provides them the ability to place and receive calls to and from the PSTN.[63] As described more fully in that order, the Commission held that DigitalVoice cannot be separated into interstate and intrastate communications for compliance with Minnesota's requirements without negating valid federal policies and rules.[64] Thus, without classifying Vonage's service as either an information service or as a telecommunications service under the Act, the Commission preempted the Minnesota Commission's requirements and ruled that the Minnesota Commission "may not require Vonage to comply with its certification, tariffing or other related requirements as conditions to offering DigitalVoice in that State."[65] The Commission expressed no opinion with respect to the applicability to Vonage of Minnesota's general laws governing entities conducting business within the state.[66] Appeals of that order were filed before a number of United States Courts of Appeals.[67]

E. NENA Standards Development

21. Consistent with the December 2003 agreement between NENA and the Voice on the Net (VON) Coalition, industry participants, state agencies and commissions, public safety officials and PSAPs, and the Association of Public-Safety Communications Officials - International, Inc. (APCO) have been working together under the auspices of NENA to develop solutions that will lead to VoIP subscribers receiving E911 functionality.[68] Specifically, NENA is expected to publish within the next few months an "I2" standard designed to allow VoIP providers to deliver 911 calls through the Wireline E911 Network with call back numbers and location information.[69] The Commission applauds NENA's leadership and

[61] *See id.* at 22406, para. 5.

[62] *See id.*

[63] *See id.* at 22407-08, paras. 8-9.

[64] *See id.* at 22411-12, para. 14.

[65] *Id.* at 22432, para. 46.

[66] *See id.* at 22405, para. 1.

[67] *See, e.g., California v. FCC*, No. 05-70007 (9th Cir. filed Jan. 3, 2005); *New York v. FCC*, No. 05-1060 (2d Cir. filed Jan. 7, 2005); *Pub. Util. Comm'n of Ohio v. FCC*, No. 05-3056 (6th Cir. filed Jan. 7, 2005); *Minnesota Pub. Util. Comm'n v. FCC*, No. 05-1069 (8th Cir. filed Jan. 6, 2005); *Nat'l Ass'n of State Util. Consumer Advocates v. FCC*, No. 05-1122 (8th Cir. filed Jan. 11, 2005). Each of these cases was consolidated in the United States Court of Appeals for the Ninth Circuit (Ninth Circuit) in *California v. FCC*. *See California v. FCC* (No. 05-70007). On April 15, 2005, however, the Ninth Circuit granted a motion by the state of California and the California Public Utility Commission for voluntary dismissal, and currently is considering a motion to transfer the remaining cases to the United States Court of Appeals for the Eighth Circuit. *See* Petitioners Joint Motion to Transfer Proceedings and Amend Briefing Schedule, *National Ass'n of State Util. Consumer Advocates v. FCC*, No. 05-71238 (9th Cir. filed Feb. 22, 2005).

[68] *See* VON Coalition and NENA, *Public Safety and Internet Leaders Connect on 911*, Press Release (Dec. 1, 2003) <http://www.von.org/usr_files/VOIP%20press%20release%20FINAL%20112803> (setting forth agreement for how two industry groups will work together as VoIP is deployed).

[69] *See* Letter from Cronan O'Connell, Vice President-Federal Regulatory, Qwest, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, at 2 (filed Apr. 11, 2005) (Qwest Apr. 11, 2005 *Ex Parte* Letter) ("I2 NENA Specifications targeted for completion in April/May 2005"); VON Coalition and NENA, *Answering the Call for 9-1-1 Emergency Services in an Internet World* at 7 (Jan. 2005)

industry's efforts in this regard, which will likely play a critical role in the provision of E911 services by interconnected VoIP service providers.

III. DISCUSSION

22. In this Order, we define "interconnected VoIP service" and require providers of this type of VoIP service to incorporate E911 service into all such offerings within the period of time specified below. We commit ourselves to swift and vigorous enforcement of the rules we adopt today. Because we have not decided whether interconnected VoIP services are telecommunications services or information services, we analyze the issues addressed in this Order primarily under our Title I ancillary jurisdiction to encompass both types of service. We decline to exempt providers of interconnected VoIP services from liability under state law related to their E911 services. Accompanying today's Order is an *NPRM* that addresses a number of issues raised by our decision today.

A. Scope

23. Our first task is to determine what IP-enabled services should be the focus of our concern. We begin by limiting our inquiry to VoIP services, for which some type of 911 capability is most relevant.[70] The Commission previously has determined that customers today lack any expectation that 911 will function for non-voice services like data services.[71] The record clearly indicates, however, that consumers expect that VoIP services that are interconnected with the PSTN will function in some ways like a "regular telephone" service.[72] At least regarding the ability to provide access to emergency

<http://www.von.org/usr_files/911%20VON%20White%20Paper%201-12-05%20final.pdf> (VON/NENA Jan. 2005 White Paper) (stating that I2 specification will be available in the second quarter of 2005).

[70] *Cf. Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CC Docket Nos. 90-571, 98-67, CG Docket No. 03-123, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 19 FCC Rcd 12475, 12521-22, paras. 116-18 (2004) (granting extension of waiver exempting Video Relay Services providers from requirement automatically and immediately to transfer emergency calls to an appropriate PSAP); *Provision of Improved Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CC Docket No. 98-67, Order on Reconsideration, 18 FCC Rcd 4761, 4766, para. 12 (2003) ("waiv[ing] the TRS mandatory minimum standard requiring emergency call handling for a five year period as applied to IP Relay providers").

[71] *Cf. E911 Scope Order*, 18 FCC Rcd at 25351, para. 28 (exempting from mobile satellite service 911 requirements any service that utilizes terrestrial temporary fixed earth station terminals which are designed only for data services). As the Commission stated in the context of mobile satellite service 911 obligations, we may revisit this exemption in the future should the technology or consumer expectations change. *See id.*

[72] *See, e.g.*, APT Comments at 6 (stating that "[c]onsumers have expectations that VOIP services are fundamentally equivalent to telephony services" and quoting a Vonage advertisement stating that VoIP service is "like the home phone service you have today" (citing Vonage, http://www.vonage.com/learn_tour.php (visited May 20, 2004))); Alcatel Comments at 18-19 (stating that customers have a reasonable expectation that 911/E911 services will be available for most VoIP services, and noting that voice functions provided as part of an Xbox video game service are a VoIP service for which such an expectation is not reasonable because a video game service is not a replacement for PSTN service); Nebraska Commission Comments at 6 (claiming that consumers would expect a service to offer similar protections as compared to traditional local exchange service if the service uses NANP numbers; utilizes the PSTN in either originating or terminating service; is advertised or used as telephone service or as a replacement service for POTS; and is functionally equivalent to traditional telephony); New Jersey Ratepayer Advocate Comments at 16, 22 (stating that consumers likely will expect to have rapid access to emergency services via 911 for VoIP services that are marketed and sold as a substitute for traditional telephone service – which we understand generally are interconnected VoIP services); SBC Comments at 58-61 (arguing that consumers would be more likely

services by dialing 911, we find these expectations to be reasonable. If a VoIP service subscriber is able to receive calls from other VoIP service users *and* from telephones connected to the PSTN, and is able to place calls to other VoIP service users *and* to telephones connected to the PSTN, a customer reasonably could expect to be able to dial 911 using that service to access appropriate emergency services.[73] Thus, we believe that a service that enables a customer to do everything (or nearly everything[74]) the customer could do using an analog telephone, and more, can at least reasonably be expected and required to route 911 calls to the appropriate destination.

24. The E911 rules the Commission adopts today apply to those VoIP services that can be used to receive telephone calls that originate on the PSTN and can be used to terminate calls to the PSTN – "interconnected VoIP services." Although the Commission has not adopted a formal definition of "VoIP," we use the term generally to include any IP-enabled services offering real-time, multidirectional voice functionality, including, but not limited to, services that mimic traditional telephony.[75] Thus, an interconnected VoIP service is one we define for purposes of the present Order as bearing the following characteristics: (1) the service enables real-time, two-way voice communications; (2) the service requires a broadband connection from the user's location;[76] (3) the service requires IP-compatible CPE;[77] and

to expect that 911 service would work for interconnected real-time voice services than for strictly peer-to-peer services or data services); Time Warner Comments at 8; Letter from Glenn S. Richards, Counsel for VON Coalition, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 4 (filed May 12, 2005) (VON Coalition May 12, 2005 *Ex Parte* Letter); *cf.* EFF Comments at 3-4 (arguing that evaluating consumer expectations is difficult and that at a minimum the Commission should presume that services with no PSTN nexus should be exempt from traditional telecommunications regulation).

[73] *See, e.g.*, King County Comments at 2 ("The service provider of any device that functions like a telephone and has the ability to connect to the Public Switched Telephone Network (PSTN) to deliver voice calls should be required to provide E911 service to their customers. The public expectation is that any device that can make voice phone calls can call 911.").

[74] For example, some VoIP services that have full interconnection to the PSTN may not be line powered and so, unlike an analog telephone connected to the PSTN, may not work in a power outage. *See, e.g.*, New Jersey Ratepayer Advocate Comments at 23 (stating that packet switched networks do not have the same built-in power source that circuit switched networks do, and thus are more susceptible to service outages); Sonic.net Comments at 3; Montana Commission Comments at 5; Letter from Kathleen Grillo, Vice President – Federal Regulatory, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. 2 at 4 (filed Apr. 15, 2005) (Verizon Apr. 15, 2005 *Ex Parte* Letter) (stating in VoiceWing's Terms of Service that a power or broadband service outage will prevent all service, including 911 service).

[75] *See Notice*, 19 FCC Rcd at 4866, para. 3 n.7.

[76] *Cf. Vonage Order*, 19 FCC Rcd at 22424, para. 32. While we recognize that some kinds of VoIP service can be supported over a dialup connection, we expect that most VoIP services will be used over a broadband connection. We seek comment in the *NPRM* on whether we should expand the scope of the present Order to include VoIP services that do not require a broadband connection. *See infra* Part IV.

[77] The term "IP-compatible CPE" refers to end-user equipment that processes, receives, or transmits IP packets. Users may in some cases attach conventional analog telephones to certain IP-compatible CPE in order to use an interconnected VoIP service. For example, IP-compatible CPE includes, but is not limited to, (1) terminal adapters, which contain an IP digital signal processing unit that performs digital-to-audio and audio-to-digital conversion and have a standard telephone jack connection for connecting to a conventional analog telephone; (2) a native IP telephone; or (3) a personal computer with a microphone and speakers, and software to perform the conversion (softphone). *See Vonage Order*, 19 FCC Rcd at 22407, para. 6; *see also Petition for Declaratory Ruling That Pulver.com's Free World Dialup Is Neither Telecommunications Nor a Telecommunications Service*, WC Docket No. 03-45, Memorandum Opinion and Order, 19 FCC Rcd 3307, 3308 n.2 (2004) (*Pulver Order*).

(4) the service offering permits users generally to receive calls that originate on the PSTN *and* to terminate calls to the PSTN.[78] We make no findings today regarding whether a VoIP service that is interconnected with the PSTN should be classified as a telecommunications service or an information service under the Act.[79]

[78] *Cf. Vonage Order*, 19 FCC Rcd at 22407-08, paras. 8-9 (describing the origination and termination of Vonage DigitalVoice calls to and from the PSTN). The instant Order does not apply to providers of other IP-based services such as instant messaging or Internet gaming because although such services may contain a voice component, customers of these services cannot place calls to and receive calls from the PSTN. The rules we adopt today apply to interconnected VoIP services rather than the sale or use of IP-compatible CPE, such as an IP-PBX, that itself uses other telecommunications services or VoIP services to terminate traffic to and receive traffic from the PSTN. The rules we adopt in today's Order also apply only to providers that offer a single service that provides the functionality described above. *But see infra* para. 58 (tentatively concluding that separate service offerings that can be combined by the user should also be subject to our E911 requirements). Thus, the E911 requirements we impose in this Order apply to all VoIP services that are encompassed within the scope of the *Vonage Order*. In the *Vonage Order*, the Commission preempted certain state regulation of Vonage's "DigitalVoice" VoIP service, and indicated that the Commission would preempt similar state regulation of other types of IP-enabled services having basic characteristics similar to DigitalVoice. It is incumbent on this Commission to ensure that customers of these services are still able to obtain access to appropriate emergency services when dialing 911. We further note that imposing E911 regulation on interconnected VoIP service providers is consistent with the four criteria the Commission identified in the *E911 Scope Order* that have been used to determine whether particular entities should be subject to some form of 911/E911 regulation. *See supra* note 58 (citing *Notice*, 19 FCC Rcd at 4900, para. 55 (setting forth the four criteria)). In addition, the criteria we use to define the scope of the present Order are similar, though not identical, to proposals suggested by some commenters. For instance, NCTA proposes that the Commission impose certain requirements, such as 911 requirements, on VoIP services that: (1) use NANP resources; (2) receive calls from – or terminate them to – the PSTN; (3) represent a possible replacement for POTS; and (4) use IP transmission between the service provider and the end user customer, including use of an IP terminal adapter and/or IP-based telephone set. NCTA, *Balancing Responsibilities and Rights: A Regulatory Model for Facilities-Based VoIP Competition*, at 4, 22 (Feb. 2004) <http://www.ncta.com/PDF_files/VoIPWhitePaper.pdf> (NCTA VoIP White Paper). *See also* Level 3 Comments at 3, 25 (stating that VoIP providers should be required to provide "911 and E911 (where technically and operationally feasible) for those services that compete with traditional PSTN services and for which consumers have an expectation of such access"); SBC Comments at 58-61 (stating that it is most important to ensure that interconnected VoIP services offer 911 calling capabilities, as opposed to data-only services or services that are not interconnected to the PSTN); Time Warner Comments at 8, 13 (proposing that the scope of VoIP services subject to an E911 service obligation "be limited to those services that: (1) assign their subscribers NANP numbers; and (2) allow subscribers to receive calls from and terminate calls to the PSTN"); Letter from John T. Nakahata, Counsel for Microsoft, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 (filed May 8, 2005) (urging the Commission to limit the scope of the VoIP services that would be subject to an E911 mandate to "consumer real-time, two-way switched voice services offered for a fee that are interconnected with the PSTN, capable of both receiving calls from and terminating calls to the PSTN, and for which the service provider assigns the end users using the VoIP service a unique working North American Numbering Plan telephone number (other than numbers, such as toll-free numbers, that are used to reach a database that determines the destination telephone number)"); Letter from Henry Goldberg, Counsel for Skype, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1 (filed May 10, 2005) (Skype May 10, 2005 *Ex Parte* Letter) (urging the Commission to impose E911 obligations on interconnected VoIP providers that use NANPA phone numbers and "include or enable use of either traditional CPE or CPE that, like traditional CPE, is always on and offers a dial tone"); VON Coalition May 12, 2005 *Ex Parte* Letter, Attach. at 4.

[79] *Cf. Vonage Order*, 19 FCC Rcd 22414, para. 18 (declining to classify Vonage's specific service as a telecommunications service or an information service under the Act).

25. While the rules we adopt today apply to providers of all interconnected VoIP services, we recognize that certain VoIP services pose significant E911 implementation challenges. For example, the mobility enabled by a VoIP service that can be used from any broadband connection creates challenges similar to those presented in the wireless context.[80] These "portable" VoIP service providers often have no reliable way to discern from where their customers are accessing the VoIP service.[81] The Commission's past experience with setting national rules for 911/E911 service is informative, and we expect that our adoption today of E911 service obligations for providers of interconnected VoIP service will speed the further creation and adoption of such services, similar to the manner in which the Commission's adoption of E911 service obligations in the wireless context helped foster the widespread availability of E911 services for mobile wireless users, where it formerly was not possible for wireless carriers automatically to determine the precise geographic location of their customers.[82] We recognize and applaud the progress that has already been made to ensure that VoIP customers have E911 services.[83]

[80] In general, providers of solely "fixed" VoIP services (*i.e.*, those that are not portable) face fewer technical obstacles to providing their customers with E911 service. *See, e.g.*, Letter from Bennett L. Ross, General Counsel-D.C., BellSouth D.C., Inc. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1-2 (filed May 12, 2005) (BellSouth May 12, 2005 *Ex Parte* Letter) (comparing E911 challenges for fixed and nomadic services); *see also* VON Coalition May 12, 2005 *Ex Parte* Letter, Attach. at 4 (claiming that the most "workable" definition of fixed services is defining those VoIP services that are "incapable of being nomadic"). It appears that most fixed VoIP service providers already have deployed, or are in the process of deploying, E911 services very much like those provided to wireline telephone customers. *See, e.g.*, Letter from James L. Casserly, Counsel for Comcast, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1 (filed May 12, 2005) ("The VoIP service that Comcast is currently offering . . . is E911 capable. Comcast selectively routes its customers' 911 calls to the appropriate PSAPs, and Automatic Location information associated with the customer's service address is transmitted to the PSAPs along with the caller's telephone number."); NCTA Comments at 13-14 (listing various cable operators that already provide E911); Cablevision, *Optimum Voice Terms of Service, Part B* (visited May 9, 2005) <http://www.optimumvoice.com/index.jhtml?pageType=terms_of_service> (providing that "[e]nhanced 911 (E-911) is a feature of the Optimum Voice service that allows emergency operators to automatically know the telephone number and address of the dialing party"); Cox, *VoIP: Ready for Prime Time*, at 2 (visited May 9, 2005) <http://www.cox.com/about/NewsRoom/files/VoIPreadyMay04.pdf> ("Cox's managed VoIP technology enables Enhanced 911 (E-911) service, while some Internet Telephony providers do not.").

[81] *See Vonage Order*, 19 FCC Rcd at 22406, para. 5; *see also Pulver Order*, 19 FCC Rcd at 3322, para. 22; Letter from James R. Hobson, Counsel for Greater Harris County (Texas) 9-1-1, Tarrant County (Texas) 9-1-1, and NENA to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 3 (Greater Harris County/Tarrant County/NENA Apr. 15, 2005 *Ex Parte* Letter) ("Since the application is separate from the transmission facility, it is highly unlikely the VoIP service provider knows where its subscriber is using the service at a given time."); Letter from James K. Smith, Executive Director - Federal Regulatory, SBC Telecommunications, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 04-36, 04-29 and 03-211, Attach. at 19 (filed Oct. 8, 2004) (stating that it is "[i]nfeasible to locate [the] geographic end point on the IP side of an IP-PSTN communication" because "IP communications are routed to devices, not geographic locations"). The record demonstrates that there currently are no solutions that allow a provider of portable VoIP services to determine the location of an end user absent the end user affirmatively telling the service provider where he or she is. *See* Greater Harris County/Tarrant County/NENA Apr. 15, 2005 *Ex Parte* Letter, Attach. at 3 ("[T]he subscriber must play an active role in identifying his or her location for accurate 9-1-1 call routing and ALI purposes.").

[82] *But see* Letter from John T. Nakahata, Counsel to Level 3, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 6-7 (filed May 12, 2005) (Level 3 May 12, 2005 *Ex Parte* Letter).

[83] *See supra* note 80. For instance, some VoIP service providers have contracted with a third party such as a competitive LEC to indirectly interconnect with the Wireline E911 Network at the Selective Router. *See, e.g.*, Letter from Glenn T. Reynolds, Vice President – Federal Regulatory, BellSouth Corporation to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 3. (BellSouth Apr. 19, 2005 *Ex Parte* Letter). In addition, a VoIP

We stress, however, that should the need arise, we stand ready to expand the scope or substance of the rules we adopt today if necessary to ensure that the public interest is fully protected. Indeed, the *NPRM* that accompanies today's Order seeks comment on whether further intervention is necessary in this area.[84]

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service provider has established direct interconnection with the Selective Router(s) in at least one state. *See* Letter from William B. Wilhelm, Jr., Counsel for Vonage, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. 1 (filed May 9, 2005) (Vonage May 9, 2005 *Ex Parte* Letter) (explaining that in Rhode Island Vonage routes calls directly to the Selective Router that services the Rhode Island PSAP). Further, several incumbent LECs are offering, or have announced their intent to offer, VoIP service providers direct interconnection to their Selective Routers through tariff, contract, or a combination thereof. *See* Letter from Cronan O'Connell, Vice President – Federal Regulatory, Qwest to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1, Attach. at 6, 8 (Qwest Apr. 12, 2005 *Ex Parte* Letter); Verizon, *Verizon Identifies Solution Enabling VoIP Companies to Connect to E911 Emergency Calling System*, Press Release (rel. Apr. 26, 2005) <http://newscenter.verizon.com>; Letter from Glenn T. Reynolds, Vice President – Federal Regulatory, BellSouth, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 (filed May 11, 2005) (setting forth BellSouth's "commitment to expeditious development and provision of an additional product allowing VoIP providers to purchase direct connection to the E911 selective routers"); *see also, e.g.*, Letter from Mary Boyd, Vice President Government & External Affairs, Intrado, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 7 (filed Apr. 4, 2005) (Intrado Apr. 4, 2005 *Ex Parte* Letter) (stating that VoIP service providers can use existing 911/E911 infrastructure for certain services); NENA Feb. 22, 2005 *Ex Parte* Comments at 7 (stating that competitive LECs and cable VoIP providers already have access to systems necessary to provide E911 service). We further understand that it is technically possible today for interconnected VoIP providers to deliver a 911 caller's call back number and location to a geographically appropriate PSAP over the Wireline E911 Network utilizing location information provided by the caller. *See, e.g.*, Letter from Jeffrey A. Citron, Chairman and CEO, Vonage Holdings Corp., to Christopher Rice, Executive Vice President, Network Planning & Engineering, SBC, WC Docket 04-36 at 1 (filed Mar. 30, 2005) (Vonage Mar. 30, 2005 *Ex Parte* Letter) (noting that Vonage has already deployed a VoIP E911 solution in Rhode Island and trialed a solution in Qwest's King County territory); Intrado Apr. 4, 2005 *Ex Parte* Letter, Attach. at 5 ("Technology exists to enable full E9-1-1 for VoIP subscribers regardless of movement and [telephone number] assignment."); Letter from William B. Wilhelm, Jr., Counsel for Vonage Holdings Corp., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1-2 (filed Apr. 7, 2005) (Vonage Apr. 7, 2005 *Ex Parte* Letter) (noting interim solution trial with Verizon in New York and 911 access made available by SBC to its VoIP affiliate); New York City Apr. 22, 2005 *Ex Parte* Letter (stating that New York is working with Vonage and others so that VoIP users will have access to the City's 911 emergency response system); Verizon Apr. 15, 2005 *Ex Parte* Letter at 1 (noting that a Verizon VoIP 911 solution is being developed in New York City) ; Letter from Kathleen Grillo, Vice President, Federal Regulatory, Verizon to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 2-3 (filed May 11, 2005) (Verizon May 11, 2005 *Ex Parte* Letter) (detailing New York City solution); Qwest Apr. 12, 2005 *Ex Parte* Letter at 1, Attach. at 6-8 (discussing the Vonage/Qwest King County trial and Qwest's PS/ALI offering); Letter from William B. Wilhelm, Jr., Counsel for Vonage Holdings Corp., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 2 (filed Apr. 18, 2005) (Vonage Apr. 18, 2005 *Ex Parte* Letter) (noting that "Qwest's cooperation has shown that implementing the I2 solution is technically feasible"); Greater Harris County/Tarrant County/NENA Apr. 15, 2005 *Ex Parte* Letter, Attach. at 1, 5; Letter from Mary Boyd, Vice President Government & External Affairs, Intrado, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 10 (filed Apr. 19, 2005) (Intrado Apr. 19, 2005 *Ex Parte* Letter) (identifying two I2 solutions "operational today"); BellSouth Apr. 19, 2005 *Ex Parte* Letter at 1 (stating "there are numerous E911 solutions available today to any VoIP provider interested in providing such service to their end users"); Letter from Bruce A. White, Vice President and General Counsel, TeleCommunication Systems, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36, Attach. at 25-28 (filed Apr. 22, 2005) (describing the TeleCommunication Systems, Inc. VoIP 911 offering currently being trialed in Kansas City) (TCS Apr. 22, 2005 *Ex Parte* Letter).

[84] *See infra* Part IV.

B. Authority

26. We conclude that we have authority under Title I of the Act to impose E911 requirements on interconnected VoIP providers, and commenters largely agree.[85] In addition, we conclude that we have authority to adopt these rules under our plenary numbering authority pursuant to section 251(e) of the Act.[86] We find that regardless of the regulatory classification, the Commission has ancillary jurisdiction to promote public safety by adopting E911 rules for interconnected VoIP services. This Order, however, in no way prejudges how the Commission might ultimately classify these services. To the extent that the Commission later finds these services to be telecommunications services, the Commission would have additional authority under Title II to adopt these rules.

27. Ancillary jurisdiction may be employed, in the Commission's discretion, when Title I of the Act gives the Commission subject matter jurisdiction over the service to be regulated[87] and the assertion of jurisdiction is "reasonably ancillary to the effective performance of [its] various responsibilities."[88] Both predicates for ancillary jurisdiction are satisfied here.

28. First, based on sections 1 and 2(a) of the Act,[89] coupled with the definitions set forth in section 3(33) ("radio communication") and section 3(52) ("wire communication"),[90] we find that interconnected

[85] *See, e.g.*, AT&T Comments at 29; BellSouth Comments at 63; Comcast Comments at 15; Cox Comments at 22-25; NCTA Comments at 23-24; NENA Comments at 2; Net2Phone Comments at 8-9; New Jersey Ratepayer Advocate Comments at 18; SBC Comments at 57, 95-98; USCCB *et al.* Comments at 29-35; AT&T Reply at 19-21; Cingular Reply at 9-10. *But see* CompTel/Ascent Comments at 19; New York City Comments at 2-5; Sprint Comments at 27-29.

[86] 47 U.S.C. § 251(e).

[87] *See United States v. Southwestern Cable Co.*, 392 U.S. 157, 177-78 (1968) (*Southwestern Cable*). *Southwestern Cable*, the lead case on the ancillary jurisdiction doctrine, upheld certain regulations applied to cable television systems at a time before the Commission had an express congressional grant of regulatory authority over that medium. *See id.* at 170-71. In *Midwest Video I*, the Supreme Court expanded upon its holding in *Southwestern Cable*. The plurality stated that "the critical question in this case is whether the Commission has reasonably determined that its origination rule will 'further the achievement of long-established regulatory goals in the field of television broadcasting by increasing the number of outlets for community self-expression and augmenting the public's choice of programs and types of services . . . .'" *United States v. Midwest Video Corp.*, 406 U.S. 649, 667-68 (1972) (*Midwest Video I*) (quoting *Amendment of Part 74, Subpart K, of the Commission's Rules and Regulations Relative to Community Antenna Television Systems; and Inquiry into the Development of Communications Technology and Services to Formulate Regulatory Policy and Rulemaking and/or Legislative Proposals*, Docket No. 18397, First Report and Order, 20 FCC 2d 201, 202 (1969) (*CATV First Report and Order*)). The Court later restricted the scope of *Midwest Video I* by finding that if the basis for jurisdiction over cable is that the authority is ancillary to the regulation of broadcasting, the cable regulation cannot be antithetical to a basic regulatory parameter established for broadcast. *See FCC v. Midwest Video Corp.*, 440 U.S. 689, 700 (1979) (*Midwest Video II*); *see also American Library Ass'n v. FCC*, No. 04-1037, slip op. (D.C. Cir. May 6, 2005) (holding that the Commission lacked authority to impose broadcast content redistribution rules on equipment manufacturers using ancillary jurisdiction because the equipment at issue was not subject to the Commission's subject matter jurisdiction over wire and radio communications).

[88] *Southwestern Cable*, 392 U.S. at 178.

[89] 47 U.S.C. §§ 151, 152(a).

[90] Section 3(33) of the Act defines the term "radio communication" or "communication by radio" to mean "the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications)

VoIP is covered by the Commission's general jurisdictional grant. Specifically, section 1 states that the Commission is created "[f]or the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges," and that the agency "shall execute and enforce the provisions of th[e] Act."[91] Section 2(a), in turn, confers on the Commission regulatory authority over all interstate communication by wire or radio.[92] In the *Notice*, the Commission adopted no formal definition of "VoIP" but used the term generally to include "any IP-enabled services offering real-time, multidirectional voice functionality, including, but not limited to, services that mimic traditional telephony."[93] Recently, in the *Vonage Order*, the Commission found that Vonage's DigitalVoice service – an interconnected VoIP service – is subject to the Commission's interstate jurisdiction.[94] Consistent with that conclusion, we find that interconnected VoIP services are covered by the statutory definitions of "wire communication" and/or "radio communication" because they involve "transmission of [voice] by aid of wire, cable, or other like connection . . ." and/or "transmission by radio . . ." of voice. Therefore, these services come within the scope of the Commission's subject matter jurisdiction granted in section 2(a) of the Act.

29. Second, our analysis requires us to evaluate whether imposing a E911 requirement is reasonably ancillary to the effective performance of the Commission's various responsibilities. Based on the record in this matter, we find that the requisite nexus exists. The Act charges the Commission with responsibility for making available "a rapid, efficient, Nation-wide, and world-wide wire and radio communication service . . . for the purpose of *promoting safety of life and property* through the use of wire and radio communication."[95] In light of this statutory mandate, promoting an effective nationwide

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incidental to such transmission." 47 U.S.C. § 153(33). Section 3(52) of the Act defines the term "wire communication" or "communication by wire" to mean "the transmission of writing, signs, signals, pictures, and sounds of all kinds by aid of wire, cable, or other like connection between the points of origin and reception of such transmission, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications) incidental to such transmission." 47 U.S.C. § 153(52).

[91] 47 U.S.C. § 151.

[92] *See* 47 U.S.C. § 152(a) (stating that the provisions of the Act "shall apply to all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and/or is received within the United States, and to all persons engaged within the United States in such communication or such transmission of energy by radio. . .").

[93] *Notice*, 19 FCC Rcd at 4866, para. 3 n.7.

[94] *See Vonage Order*, 19 FCC Rcd at 22413-14, para. 18. In addition, the Commission adopted an order declaring that pulver.com's Free World Dialup VoIP service is an information service under the Act and is subject to federal jurisdiction. *See Pulver Order*, 19 FCC Rcd at 3311, para. 8.

[95] 47 U.S.C. § 151 (emphasis added). Our actions today are not in conflict or otherwise inconsistent with any other provision of the Act. We acknowledge that section 230 of the Act provides that "[i]t is the policy of the United States - to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation." 47 U.S.C. § 230(b)(2). We do not, however, believe that this policy statement precludes us from adopting E911 rules for interconnected VoIP providers here. We note that the Commission's discussion of section 230 in the *Vonage Order* as cautioning against regulation was limited to "traditional common carrier economic regulations." *Vonage Order*, 19 FCC Rcd at 22426, para. 35.

In addition, while we acknowledge that there are generally intrastate components to interconnected VoIP service and E911 service, we reject any argument that 911/E911 services are purely intrastate and therefore the Commission has no jurisdiction in this area. The Commission has long maintained a federal role in wireline and wireless 911/E911

911/E911 emergency access system has become one of the Commission's primary public safety responsibilities under the Act. As the Commission has recognized, "[i]t is difficult to identify a nationwide wire or radio communication service more immediately associated with promoting safety of life and property than 911."[96] Indeed, the Commission has previously relied on Title I to satisfy both prongs of the standard for asserting ancillary jurisdiction: (1) subject matter jurisdiction; and (2) the statutory goal furthered by the regulation. For example, in *Rural Telephone Coalition v. FCC*, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) upheld the Commission's assertion of ancillary jurisdiction to establish a funding mechanism to support universal service in the absence of specific statutory authority as ancillary to its responsibilities under section 1 of the Act to "further the objective of making communications service available to all Americans at reasonable charges."[97] Thus, we conclude that as more consumers begin to rely on interconnected VoIP services for their communications needs, the action we take here ensures that the Commission continues to "further the achievement of long-established regulatory goals"[98] to "promot[e] safety of life and property."[99]

30. Our actions today are consistent with, and a necessary extension of, our prior exercises of authority to ensure public safety. Since 1996, the Commission has acted to impose 911/E911 rules on providers of new technologies.[100] Since that time, the Commission has affirmed and expanded on those

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issues. *See generally, e.g., E911 Scope Order*, 18 FCC Rcd 25340; *N11 Codes Fifth Report and Order*, 16 FCC Rcd 22264; *E911 First Report and Order*, 11 FCC Rcd 18676; *Amendment of Part 63 of the Commission's Rules to Provide for Notification by Common Carriers of Service Disruptions*, CC Docket No. 91-273, Second Report and Order, 9 FCC Rcd 3911, 3925, para. 35 (1994) (*Part 63 Notification Order*) ("We reject suggestions that the reliability and efficiency of 911 systems are not of Commission interest."). The Commission's assertion of federal jurisdiction over 911/E911 matters has since been ratified twice by Congress. *See* 911 Act § 2(a)(4) (finding that "improved public safety remains an important public health objective of Federal, State, and local governments and substantially facilitates interstate and foreign commerce"). *See generally* 911 Act; Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004, Pub. Law 108-494 (2004) (codified at 47 U.S.C. § 901 nt.) (ENHANCE 911 Act of 2004). Indeed, similar to the Commission's conclusions in the wireless 911/E911 context, we identify various inseverable, nationwide aspects of E911 operations for interconnected VoIP services, including: (1) ubiquitous E911 operational compatibility; (2) avoiding state-by-state technical and operational requirements that would burden equipment manufacturers and providers; and (3) avoiding confusion by end users who attempt to contact emergency services while using the interconnected VoIP service away from their primary locations. *See E911 First Report and Order*, 11 FCC Rcd at 18729-30, para. 104.

[96] *E911 NPRM*, 9 FCC Rcd at 6171, para. 7; *see Part 63 Notification Order*, 9 FCC Rcd at 3925, para. 35 ("The reliability of 911 service is integrally related to our responsibilities under Section 1 of the Act, which include 'promoting safety of life and property through the use of wire and radio communication.'"); *see also Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; E911 Phase II Compliance Deadlines for Tier III Carriers*. CC Docket No. 94-102, Order, FCC 05-79 (rel. Apr. 1, 2005); Federal Communications Commission, *FCC Amended Report to Congress on the Deployment of E-911 Phase II Services by Tier III Service Providers* at 2, 11 (Apr. 1, 2005); *E911 Scope Order*, 18 FCC Rcd at 25346, paras. 13, 16; *E911 First Report and Order*, 11 FCC Rcd at 18681, para. 8.

[97] *Rural Tel. Coalition v. FCC*, 838 F.2d 1307, 1315 (D.C. Cir. 1988).

[98] *Midwest Video I*, 406 U.S. at 667-68 (quoting *CATV First Report and Order*, 20 FCC 2d at 202).

[99] 47 U.S.C. § 151.

[100] *See generally E911 First Report and Order*, 11 FCC Rcd 18676; *E911 Scope Order*, 18 FCC Rcd 25340.

efforts by exercising jurisdiction over other services to impose 911/E911 requirements, relying primarily on its Title I authority.[101] That exercise of authority has been ratified, not rebuked, by Congress.[102]

31. Further, we note that our actions here are consistent with other provisions of the Act. For example, we are guided by section 706,[103] which directs the Commission (and state commissions with jurisdiction over telecommunications services) to encourage the deployment of advanced telecommunications capability to all Americans by using measures that "promote competition in the local telecommunications market" and removing "barriers to infrastructure investment."[104] Internet-based services such as interconnected VoIP are commonly accessed via broadband facilities (*i.e.*, advanced telecommunications capabilities under the 1996 Act).[105] The uniform availability of E911 services may spur consumer demand for interconnected VoIP services, in turn driving demand for broadband connections, and consequently encouraging more broadband investment and deployment consistent with the goals of section 706.[106] Indeed, the Commission's most recent *Fourth Section 706 Report to Congress* recognizes the nexus between VoIP services and accomplishing the goals of section 706.[107]

32. Moreover, as stated above, in recognition of the critical role 911/E911 services play in achieving the Act's goal of promoting safety of life and property, Congress passed the 911 Act, which among other things made 911 the universal emergency telephone number for both wireline and wireless telephone service for the nation.[108] In the 911 Act, Congress made a number of findings regarding wireline and wireless 911 services, including that "improved public safety remains an important public health objective of Federal, State, and local governments and substantially facilitates interstate and foreign commerce," and that "emerging technologies can be a critical component of the end-to-end communications infrastructure connecting the public with emergency [services]."[109] Thus, we believe

[101] *See E911 Scope Order*, 18 FCC Rcd at 25345-46, paras. 12-16.

[102] *See generally* 911 Act; ENHANCE 911 Act of 2004.

[103] 47 U.S.C. § 157 nt. (incorporating section 706 of the Telecommunications Act of 1996, Pub. Law No. 104-104, 110 Stat. 56 (1996) (1996 Act)).

[104] 47 U.S.C. § 157 nt.; *see also, e.g.*, 47 U.S.C. § 154(o) (requiring the Commission, "[f]or the purpose of obtaining maximum effectiveness from the use of radio and wire communications in connection with safety of life and property," to investigate and study "methods of obtaining the cooperation and coordination of these systems"); 47 U.S.C. § 271(c)(2)(B)(vii) (requiring the Commission, in order to grant a Bell operating company (BOC) interLATA authority, to find that the BOC is providing nondiscriminatory access to 911 and E911 services).

[105] *See* 47 U.S.C. § 157 nt. (c)(1) (defining "advanced telecommunications capability").

[106] *Cf.* Letter from Donna N. Lampert, Counsel for AOL, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1 (filed May 11, 2005) (AOL May 11, 2005 *Ex Parte* Letter) (stating that AOL has a "strong concern that VoIP providers with inferior emergency services reduce consumer confidence in VoIP, negatively affecting AOL").

[107] *See Availability of Advanced Telecommunications Capability in the United States*, GN Docket No. 04-54, Fourth Report to Congress, 19 FCC Rcd 20540, 20578 (2004) ("[S]ubscribership to broadband services will increase in the future as new applications that require broadband access, *such as VoIP*, are introduced into the marketplace, and consumers become more aware of such applications.") (emphasis added).

[108] *See* 911 Act § 3(a). *Cf.* ENHANCE 911 Act of 2004, § 102(4) ("[E]nhanced 911 is a high national priority and it requires Federal leadership, working in cooperation with State and local governments and with the numerous organizations dedicated to delivering emergency communications services.").

[109] 47 U.S.C. § 615(a)(3).

that our action here to impose E911 obligations on interconnected VoIP providers is consistent with Congress' public safety policy objectives.

33. Finally, as an additional and separate source of authority for the requirements we impose on providers of interconnected VoIP service in this Order, we rely on the plenary numbering authority over U.S. NANP numbers Congress granted this Commission in section 251(e) of the Act and,[110] in particular, Congress' direction to use its plenary numbering authority to designate 911 as the universal emergency telephone number within the United States, which "shall apply to both wireline and wireless telephone service."[111] We exercise our authority under section 251(e) of the Act because interconnected VoIP providers use NANP numbers to provide their services.

34. When the Commission initially implemented the 911 Act, it took actions similar to those we take today under its numbering authority. For instance, in the order implementing the 911 Act, the Commission exercised federal jurisdiction over the establishment of the deadlines by when all carriers had to provide 911 functionality, and adopted various deadlines depending on such things as whether a local community had established a PSAP.[112] The Commission also required carriers to implement certain switching and routing changes to their networks. Specifically, the Commission required all carriers to "implement a permissive dialing period, during which emergency calls will be routed to the appropriate emergency response point using either 911 or the seven- or ten-digit number."[113] In order to achieve this, carriers had to "prepare and modify switches to 'translate' the three-digit 911 dialed emergency calls at the appropriate network points to the seven- or ten-digit emergency number in use by those PSAPs, and, subsequently, route the calls to them."[114] The Commission also recognized that the transition to 911 in general required more network changes than required by translation.[115]

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[110] 47 U.S.C. § 251(e)(1) (providing that "[t]he Commission shall have exclusive jurisdiction over those portions of the North American Numbering Plan that pertain to the United States."). The Commission has been granted explicit authority to "delegat[e] to State commissions or other entities all or any portion of such jurisdiction." *Id.* The Commission has declared that it has retained its "authority to set policy with respect to all facets of numbering administration in the United States." *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers, Area Code Relief Plan for Dallas and Houston, Ordered by the Public Utility) Commission of Texas, Administration of the North American Numbering Plan, Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech-Illinois*, CC Docket No. 96-98, CC Docket No. 95-185, NSD File No. 96-8, CC Docket No. 92-237, IAD File No. 94-102, Second Report and Order and Memorandum Opinion and Order, 11 FCC Rcd 19392, 19512, para. 268 (1996) (explaining that by retaining exclusive jurisdiction over numbering policy the Commission preserves its ability to act flexibly and expeditiously). However, the Commission has delegated to others the authority to address technical and operational issues, such as the delegation to state commissions of numbering authority to address the technical and operational issues associated with the implementation of 811. *See Use of N11 Codes and Other Abbreviated Dialing Arrangements*, CC Docket No. 92-105, Sixth Report and Order, FCC 05-59, para. 35 (rel. Mar. 14, 2005).

[111] *See* 47 U.S.C. § 251(e)(3).

[112] *See N11 Codes Fifth Report and Order*, 16 FCC Rcd 22266-82, paras. 4-45.

[113] *Id.* at 22271, para. 16.

[114] *Id.* at 22272, para. 19.

[115] *See id.* at 22272, para. 20.

35. The Commission's authority to require network changes to provide the E911 features that have long been central to the nation's 911 infrastructure[116] is included within Congress' directive to the Commission to require the establishment of 911 as a "universal emergency telephone number . . . for reporting an emergency to appropriate authorities and requesting assistance."[117]

C. Requirements

36. In this Order, we adopt an immediate E911 solution that applies to all interconnected VoIP services. We find that this requirement most appropriately discharges the Commission's statutory obligation to promote an effective nationwide 911/E911 emergency access system by recognizing the needs of the public safety community to get call back and location information and balancing those needs against existing technological limitations of interconnected VoIP providers.[118] By requiring interconnected VoIP providers to adopt E911 solutions as a top priority, we hope to minimize the likelihood of situations like the recent incidents discussed above.[119] With regard to portable interconnected VoIP services, however, we intend to adopt in a future order an advanced E911 solution for interconnected VoIP that must include a method for determining a user's location without assistance from the user as well as firm implementation deadlines for that solution. To this end, we seek comment in the *NPRM* on possible additional solutions including technical options and possible timelines for implementation.

37. ***Enhanced 911 Service.*** We require that, within 120 days of the effective date of this Order, an interconnected VoIP provider must transmit all 911 calls, as well as a call back number and the caller's "Registered Location" for each call,[120] to the PSAP, designated statewide default answering point, or appropriate local emergency authority that serves the caller's Registered Location and that has been designated for telecommunications carriers under section 64.3001 of the Commission's rules.[121] These calls must be routed through the use of ANI and, if necessary, pseudo-ANI,[122] via the dedicated Wireline E911 Network,[123] and the Registered Location must be available from or through the ALI Database. As explained in paragraph 42 *infra*, however, an interconnected VoIP provider need only provide such call back and location information as a PSAP, designated statewide default answering point, or appropriate local emergency authority is capable of receiving and utilizing. While 120 days is an aggressively short

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[116] *See, e.g., E911 First Report and Order*, 11 FCC Rcd at 18679, para. 5 (explaining that in the previous decade most PSAPs had been upgraded to receive call back and location information to permit more efficient and speedy response by emergency service personnel and that, at the time, 85% of 911 services included some form of enhanced 911).

[117] 47 U.S.C. § 251(e)(3).

[118] *See supra* para. 25. Indeed, the Commission similarly imposed difficult but achievable requirements on CMRS providers in the name of public safety. *See supra* paras. 16-18.

[119] *See supra* note 2 (describing incidents in Texas, Connecticut, and Florida in which users of interconnected VoIP services were reported to be unable to reach emergency dispatchers by dialing 911).

[120] The term "Registered Location" is defined *infra*, para. 46.

[121] 47 C.F.R. § 64.3001; *see also N11 Codes Fifth Report and Order*, 16 FCC Rcd 22269-77, paras. 10-31.

[122] The terms "ANI" and "pseudo-ANI" as used herein have the same meanings as those set forth in section 20.3 of the Commission's rules. 47 C.F.R. § 20.3.

[123] The term Wireline E911 Network is defined *supra*, para. 14.

amount of time in which to comply with these requirements, the threat to public safety if we delay further is too great and demands near immediate action.

38. Interconnected VoIP providers may satisfy this requirement by interconnecting indirectly through a third party such as a competitive LEC, interconnecting directly with the Wireline E911 Network, or through any other solution that allows a provider to offer E911 service as described above. As an example of the first type of arrangement, Level 3 offers a wholesale product that allows certain interconnected VoIP providers to provide E911 service to their customers.[124] 8x8, Inc. recently announced that it is utilizing Level 3's service to provide E911 service to its Packet8 service subscribers in 2,024 rate centers covering 43 U.S. states.[125] Likewise, Intrado has indicated that it is prepared to operate as a competitive LEC in a number of states to provide indirect interconnection to interconnected VoIP providers,[126] and Pac-West Telecom is offering a similar service in "virtually 100%" of the state of California.[127] We note that the Commission currently requires LECs to provide access to 911 databases and interconnection to 911 facilities to all telecommunications carriers, pursuant to sections 251(a) and (c) and section 271(c)(2)(B)(vii) of the Act.[128] We expect that this would include all the elements

[124] *See* Level 3 May 12, 2005 *Ex Parte* Letter at 2 (describing product as suitable for providers of fixed interconnected VoIP services that utilize only "native" telephone numbers); Level 3, *E-911: Enhanced 911 for VoIP* (visited Apr. 26, 2005) <http://www.level3.com/userimages/dotcom/pdf/Level_3_E-911_Fact_Sheet.pdf> (stating that Level 3 offers certain types of VoIP providers the ability to provide full E-911 service for approximately 60% of the U.S. households with plans to support 70-80% later in 2005).

[125] *See* 8x8, Inc., *Packet8 E911 'Real' Emergency Phone Service Now Available in Over 2,000 U.S. Rate Centers*, Press Release (rel. May 12, 2005) <http://www.8x8.com/index.php?s=press_releases&item=40>; Level 3, *8x8 Teams with Level 3 to Enhance Residential VoIP Services*, Press Release (rel. June 14, 2004) <http://www.level3.com/press/5013.html>.

[126] *See* Letter from Mary Boyd, Vice President Government & External Affairs, Intrado, to Marlene Dortch, Secretary, FCC, WC Docket 04-36, Attach. at 1, 4-5 (filed Apr. 25, 2005) (Intrado Apr. 25, 2005 *Ex Parte* Letter). Intrado currently provides an array of E911 services to many major VoIP providers, but does not typically provide interconnection. *See id.*; Intrado Apr. 4, 2005 *Ex Parte* Letter, Attach. at 3.

[127] *See* Pac-West Telecomm, Inc., *Pac-West Telecomm Provides E911 Capabilities to VoIP Providers*, Press Release (rel. May 16, 2005) <http://www.pacwest.com/investor/investor_releases.cfm?ticker=PACW&script=415&layout=6&item_id=710492>.

[128] *See* 47 U.S.C. § 251(a)(1) (requiring all telecommunications carriers "to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers"); 47 U.S.C. § 251(c) (requiring incumbent LECs, other than those exempted by section 251(f), to make available unbundled network elements to requesting telecommunications carriers); 47 C.F.R. § 51.319(f) ("An incumbent LEC shall provide a requesting telecommunications carrier with nondiscriminatory access to 911 and E911 databases on an unbundled basis, in accordance with section 251(c)(3) of the Act . . . ."); *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98, 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd 16978, 17332, para. 557 (2003) ("[B]ecause of the unique nature of 911 and E911 services and the public safety issues inherent in ensuring nondiscriminatory access to such databases, we conclude that . . . competitive carriers must continue to obtain unbundled access to those databases to ensure that their customers have access to emergency services."); 47 U.S.C. § 271(c)(2)(B)(vii)(1) (requiring BOCs to provide nondiscriminatory access to 911 and E911 services to other telecommunications carriers); *Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as Amended, to Provide In-Region, InterLATA Services in Michigan*, CC Docket No. 97-137, Memorandum Opinion and Order, 12 FCC Rcd 20543, 20679, para. 256 (1997) ("[S]ection 271 requires a BOC to provide competitors access to its 911 and E911 services

necessary for telecommunications carriers to provide 911/E911 solutions that are consistent with the requirements of this Order, including NENA's I2 or wireless E911-like solutions.

39. At the same time, the record indicates that incumbent LECs are increasingly offering E911 solutions that allow VoIP providers to interconnect directly to the Wireline E911 Network through tariff, contract, or a combination thereof. For example, Qwest has tariffed E911 offerings that are currently available to VoIP providers and can be coupled with third party service offerings to enable the provision of E911 service to portable interconnected VoIP services, including those that allow their end users to use non-native NPA-NXX numbers.[129] Verizon is developing an E911 solution for interconnected VoIP providers that is comparable to the solution it offers for wireless E911.[130] Verizon has announced that it will offer this solution in New York City beginning in summer 2005 and will roll it out in other locations if the New York City model succeeds.[131] BellSouth currently offers tariffed services similar to those that Qwest uses to provide its VoIP E911 solution and recently announced that it is offering interconnected VoIP providers access to 911 facilities equivalent to that which it offers CMRS carriers.[132] SBC has offered to negotiate commercial agreements with VoIP providers for direct connection to Selective Routers and ALI databases, comparable to the E911 access that SBC provides to competitive LECs.[133]

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in the same manner that a BOC obtains such access, *i.e.*, at parity."); *id.* ("For facilities-based carriers, nondiscriminatory access to 911 and E911 service also includes the provision of unbundled access to [a BOC's] 911 database and 911 interconnection, including the provision of dedicated trunks from the requesting carrier's switching facilities to the 911 control office . . . ."). Of course, if we find interconnected VoIP to be a telecommunications service, or if a provider of interconnected VoIP holds itself out as a telecommunications carrier and complies with appropriate federal and state requirements, access under these provisions would be available to those providers as well.

[129] *See* Qwest Apr. 12, 2005 *Ex Parte* Letter at 1 (describing Qwest's PS/ALI offering and how such offering can be bundled with a third party ALI database interface to provide E911 service to nomadic VoIP customers); Letter from Cronan O'Connell, Vice President-Federal Regulatory, Qwest to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1 (filed May 12, 2005) (Qwest May 12, 2005 *Ex Parte* Letter). The Qwest's E911 offering for interconnected VoIP is essentially the E911 solution that Qwest developed for Multi-Line Telephone Systems, and is sold out of Qwest's retail tariffs. *See* Qwest Apr. 12, 2005 *Ex Parte* Letter, Attach. at 6-7. At least one provider of interconnected VoIP services has found Qwest's offering sufficient. *See* Letter from Jeffery A. Citron, Chairman and CEO, Vonage Holdings Corp., to Richard C. Notebaert, Qwest Communications (dated Apr. 13, 2005) *in* Vonage Apr. 18, 2005 *Ex Parte* Letter ("With the access Qwest has agreed to provide, Vonage will be able to route emergency service calls placed by its customers directly to public safety operators. . . .").

[130] *See* Verizon Apr. 15, 2005 *Ex Parte* Letter at 1; Verizon May 11, 2005 *Ex Parte* Letter at 2-3.

[131] *See* Verizon, *Verizon Identifies Solution Enabling VoIP Companies to Connect to E911 Emergency Calling System*, Press Release (rel. Apr. 26, 2005) <http://newscenter.verizon.com>; *see also* New York City Apr. 22, 2005 *Ex Parte* Letter at 1; Verizon May 11, 2005 *Ex Parte* Letter at 2-3.

[132] *See* BellSouth Apr. 19, 2005 *Ex Parte* Letter at 1; BellSouth May 12, 2005 *Ex Parte* Letter at 3-4 (stating that "[u]sing [BellSouth's CMRS 911] offering as the baseline, BellSouth is offering equivalent 9-1-1 infrastructure network access to VoIP providers"); Letter from Bennett L. Ross, General Counsel-D.C., BellSouth D.C., Inc. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 1 (filed May 16, 2005) (BellSouth May 16, 2005 *Ex Parte* Letter) (stating that BellSouth's offering to interconnected VoIP providers "provides the same access as that which BellSouth currently provides to CMRS carriers").

[133] *See* Letter from Christopher T. Rice, Executive Vice President, Network Planning & Engineering, SBC, to Jeffrey A. Citron, Chairman & CEO, Vonage (dated Apr. 18, 2005) (SBC/Vonage Apr. 18, 2005 Letter) *in* Letter from James K. Smith, Executive Director – Federal Regulatory, SBC Services, Inc. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 04-36 at 10 (SBC Apr. 26, 2005 *Ex Parte* Letter) (explaining that SBC currently permits VoIP